

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P231605

Luminaire Tested: **S122-DR-LO-35-X-0048-1-U-DD-4-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231605
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33910)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122-DR-LO-35-X-0048-1-U-DD-4-W
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH DROP LENS.
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1226.9 lumens
Efficiency: N/A
Efficacy: 90.2 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.14' x L: 3.92' x H: 0.08')
CIE Type: Semi-Direct

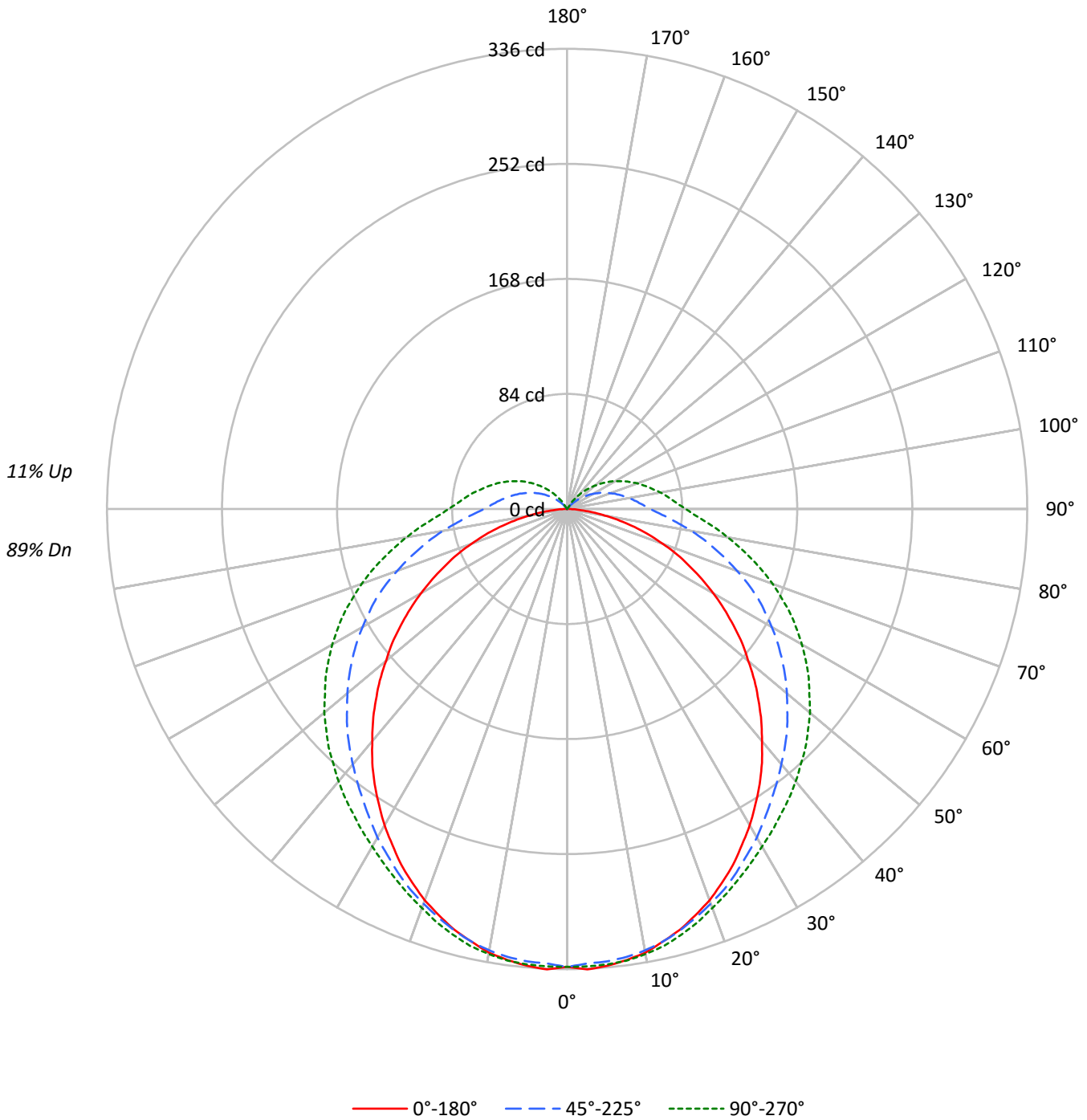
Input Watts (W): 13.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P231605

CATALOG NUMBER: S122-DR-LO-35-X-0048-1-U-DD-4-W

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	116	116	116	116	112	112	112	112	105	105	105	98	98	98	92	92	92	89				
1	104	98	93	89	100	95	90	86	89	85	81	83	80	77	77	75	73	70				
2	94	85	77	71	90	82	75	69	76	70	66	71	67	62	67	63	59	56				
3	85	74	65	58	81	71	63	57	67	60	54	62	57	52	58	54	49	47				
4	78	65	56	48	74	63	54	47	59	51	46	55	49	44	52	46	42	39				
5	71	58	48	41	68	56	47	41	52	45	39	49	43	38	46	41	36	34				
6	66	52	42	36	63	50	42	35	47	40	34	45	38	33	42	36	32	29				
7	61	47	38	31	58	45	37	31	43	35	30	40	34	29	38	32	28	26				
8	56	43	34	28	54	41	33	28	39	32	27	37	31	26	35	29	25	23				
9	53	39	31	25	51	38	30	25	36	29	24	34	28	23	32	27	23	21				
10	49	36	28	23	48	35	27	22	33	26	22	32	25	21	30	25	20	19				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6562	6562	6562
5°	6587	6294	6252
10°	6531	6059	5953
15°	6428	5798	5642
20°	6302	5530	5323
25°	6149	5269	5044
30°	5972	5017	4802
35°	5787	4768	4603
40°	5571	4567	4439
45°	5369	4393	4285
50°	5141	4209	4137
55°	4922	4040	3983
60°	4669	3862	3828
65°	4376	3688	3665
70°	4018	3448	3477
75°	3577	3217	3273
80°	2835	2996	3075
85°	1866	2790	2905



TEST NUMBER: P231605

CATALOG NUMBER: S122-DR-LO-35-X-0048-1-U-DD-4-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.7	2.6
10°-20°	90.2	7.4
20°-30°	135.1	11.0
30°-40°	162.9	13.3
40°-50°	173.7	14.2
50°-60°	167.8	13.7
60°-70°	145.7	11.9
70°-80°	110.9	9.0
80°-90°	73.6	6.0
90°-100°	50.9	4.2
100°-110°	37.2	3.0
110°-120°	25.1	2.0
120°-130°	14.5	1.2
130°-140°	6.3	0.5
140°-150°	1.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	257.1	21.0
0°-40°	420.0	34.2
0°-60°	761.5	62.1
0°-90°	1091.7	89.0
90°-120°	113.2	9.2
90°-150°	135.2	11.0
90°-180°	135.0	11.0
0°-180°	1226.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	334	334	334	334	334	
5°	335	334	332	335	334	32
15°	318	319	319	322	322	90
25°	287	290	293	298	298	132
35°	245	252	260	270	272	153
45°	198	210	227	241	246	152
55°	148	167	192	210	215	133
65°	98	123	154	173	180	98
75°	51	80	111	132	139	54
85°	10	41	74	94	101	12
90°	0	29	61	80	87	1
95°	0	24	52	71	77	0
105°	0	14	40	56	62	0
115°	0	6	28	43	48	0
125°	0	1	17	29	34	0
135°	0	0	6	16	20	0
145°	0	0	0	4	7	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P231605

CATALOG NUMBER: S122-DR-LO-35-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	334.3	334.3	334.3	334.3	334.3	334.3	334.3	334.3	334.3	334.3	334.3
2.5°	336.5	335.4	333.8	334.3	334.9	334.9	334.3	334.3	333.3	332.2	332.2
5°	334.9	333.8	332.2	333.3	333.8	333.8	333.8	333.3	332.7	331.6	332.2
7.5°	332.2	331.1	330.0	330.5	331.1	332.2	331.6	331.6	331.1	330.0	330.5
10°	328.9	327.3	326.2	327.3	327.8	328.9	328.9	328.9	328.4	327.3	327.8
12.5°	323.5	323.0	321.9	323.5	324.1	325.1	325.1	325.1	324.1	323.5	324.6
15°	318.1	317.0	315.9	317.6	318.6	319.7	319.7	319.7	319.2	318.6	319.7
17.5°	311.1	310.0	310.0	311.1	312.7	313.8	313.8	314.3	313.2	312.7	313.8
20°	304.0	303.0	302.4	304.6	305.7	306.7	306.7	307.3	306.7	306.7	307.8
22.5°	295.4	294.8	294.8	296.5	297.5	298.6	299.7	299.7	299.7	300.3	300.8
25°	286.7	286.2	286.7	288.3	289.4	291.1	292.1	292.1	292.1	292.7	294.3
27.5°	276.4	276.4	277.0	279.2	280.8	282.4	283.5	284.0	284.0	284.6	286.7
30°	266.7	266.2	266.7	269.4	271.0	273.2	274.3	274.8	275.4	277.0	278.6
32.5°	255.9	255.3	256.4	259.1	261.3	262.9	265.1	266.2	266.7	268.3	270.5
35°	245.1	244.5	245.6	248.3	251.0	253.2	254.8	255.9	258.1	259.7	262.4
37.5°	233.7	233.7	235.3	238.0	240.7	242.9	245.1	246.7	248.9	251.6	254.3
40°	221.3	221.8	223.4	227.2	229.9	233.2	235.3	237.0	240.2	243.4	246.7
42.5°	209.9	209.9	212.1	215.9	218.6	222.3	225.6	227.2	231.5	235.3	239.1
45°	197.5	197.5	200.7	204.5	207.7	212.1	215.3	218.0	222.3	227.2	230.5
47.5°	185.6	186.1	189.3	193.1	196.9	201.8	205.0	208.8	213.7	218.0	222.3
50°	172.6	173.7	177.4	181.8	186.1	191.5	195.3	199.6	204.5	209.4	213.7
52.5°	161.2	161.8	165.5	170.4	174.7	180.2	185.6	190.4	195.8	200.7	205.0
55°	148.2	149.9	153.6	158.5	163.9	169.3	175.3	180.7	186.6	191.5	196.9
57.5°	135.8	138.0	142.3	146.6	152.6	159.1	165.0	170.4	176.4	182.3	187.2
60°	123.3	125.5	130.4	135.2	141.7	148.2	154.7	161.2	166.6	172.6	177.4
62.5°	110.9	113.6	117.9	123.3	130.9	138.0	144.4	150.9	156.9	162.8	168.2
65°	98.5	101.7	106.0	112.5	119.6	126.6	133.6	140.7	146.6	153.6	158.0
67.5°	87.1	89.3	94.1	101.2	108.7	116.3	123.3	129.8	136.3	142.8	148.8
70°	74.1	77.9	82.2	89.8	97.4	105.0	112.5	119.6	126.1	132.0	138.0
72.5°	62.8	65.5	70.3	78.4	86.0	94.1	101.7	109.3	115.8	121.7	127.7
75°	50.9	54.1	59.5	67.1	75.7	83.9	91.4	98.5	105.5	111.4	117.4
77.5°	39.5	42.7	49.2	57.3	64.9	73.0	81.1	88.2	95.2	101.7	107.7
80°	28.1	32.5	38.4	46.5	55.2	62.8	70.9	77.9	85.5	92.0	97.4
82.5°	18.9	22.7	29.2	36.8	45.4	53.6	61.7	68.7	76.3	82.2	88.2
85°	10.3	14.6	21.6	29.2	37.3	45.4	53.6	60.6	67.6	74.1	79.5
87.5°	4.3	8.1	14.6	22.7	30.3	38.4	46.5	53.6	60.1	66.5	72.5
90°	0.0	3.8	9.7	17.3	25.4	33.0	40.6	48.1	54.6	60.6	66.0
92.5°	0.0	2.7	7.6	14.6	22.2	29.8	37.3	43.8	50.3	56.3	61.7
95°	0.0	1.6	6.5	12.4	20.0	27.0	34.1	40.6	47.1	52.5	57.9
97.5°	0.0	0.5	4.9	10.8	17.3	24.3	31.4	37.9	43.8	49.2	54.1
100°	0.0	0.0	3.2	8.7	15.1	22.2	28.7	34.6	40.6	46.0	50.9
102.5°	0.0	0.0	2.2	7.0	13.0	19.5	26.0	31.9	37.9	42.7	47.6
105°	0.0	0.0	1.1	5.4	11.4	17.3	23.3	29.2	34.6	39.5	44.4
107.5°	0.0	0.0	0.0	3.8	9.2	15.1	21.1	26.5	31.9	36.8	41.1
110°	0.0	0.0	0.0	2.7	7.6	13.0	18.4	23.8	28.7	33.5	38.4



TEST NUMBER: P231605

CATALOG NUMBER: S122-DR-LO-35-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.0	0.0	0.0	1.1	6.0	10.8	16.2	21.1	26.0	30.8	35.2
115°	0.0	0.0	0.0	0.5	4.3	8.7	14.1	18.9	23.3	28.1	31.9
117.5°	0.0	0.0	0.0	0.0	2.7	7.0	11.4	16.2	20.6	24.9	29.2
120°	0.0	0.0	0.0	0.0	1.1	4.9	9.2	13.5	17.9	22.2	26.0
122.5°	0.0	0.0	0.0	0.0	0.0	3.2	7.6	11.4	15.7	19.5	23.3
125°	0.0	0.0	0.0	0.0	0.0	1.6	5.4	9.2	13.0	16.8	20.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	3.2	7.0	10.3	14.1	17.3
130°	0.0	0.0	0.0	0.0	0.0	0.0	1.6	4.9	8.1	11.4	14.6
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	6.0	8.7	11.9
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.8	6.5	8.7
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	3.8	6.5
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	3.8
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6
145°	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P231605

CATALOG NUMBER: S122-DR-LO-35-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	334.3	334.3	334.3	334.3	334.3	334.3	334.3	334.3
2.5°	333.8	334.3	334.9	334.9	334.9	334.9	334.9	334.3
5°	333.3	334.3	334.9	334.9	334.9	334.9	334.3	333.8
7.5°	331.6	332.7	333.3	333.3	333.3	333.8	333.3	332.7
10°	329.5	330.0	330.5	331.1	331.1	331.1	330.5	330.0
12.5°	325.7	326.8	327.3	327.3	327.3	327.3	327.3	326.8
15°	320.8	321.3	322.4	322.4	322.4	323.0	321.9	321.9
17.5°	315.4	316.5	317.0	316.5	317.0	317.0	316.5	316.5
20°	309.4	310.0	310.5	310.5	311.1	311.1	310.5	310.0
22.5°	302.4	303.5	304.0	304.0	304.6	305.1	304.6	304.0
25°	295.4	296.5	297.5	297.5	298.1	298.6	298.1	297.5
27.5°	288.3	289.4	290.0	290.5	291.6	291.6	291.6	291.1
30°	280.2	281.9	282.4	283.5	284.6	285.1	285.1	284.6
32.5°	272.7	274.3	275.9	277.0	278.1	278.6	278.6	278.6
35°	264.5	266.7	268.9	270.5	271.6	272.1	272.7	272.1
37.5°	257.5	259.7	261.8	264.0	265.1	265.6	265.6	266.2
40°	249.9	252.6	254.8	256.4	258.1	259.1	259.1	259.7
42.5°	242.4	245.1	247.8	249.9	251.6	252.6	252.6	252.6
45°	234.2	238.0	240.2	242.4	244.5	245.6	246.2	246.2
47.5°	226.1	229.9	232.6	235.3	237.0	238.0	238.6	238.6
50°	218.0	221.8	225.1	227.8	229.4	230.5	231.5	231.5
52.5°	209.4	213.7	216.4	219.1	221.3	222.9	223.4	222.9
55°	201.2	205.0	208.3	211.0	213.2	214.8	215.3	215.3
57.5°	191.5	195.8	199.6	202.3	204.5	206.1	206.7	206.7
60°	182.9	186.6	190.4	193.1	195.8	197.5	198.0	198.0
62.5°	173.1	177.4	181.2	184.5	186.6	188.3	188.8	188.8
65°	163.4	167.7	171.5	174.7	176.4	178.0	179.1	179.6
67.5°	153.1	157.4	161.8	164.5	166.6	168.2	169.3	169.3
70°	143.4	147.7	151.5	154.2	156.3	158.5	159.1	159.6
72.5°	133.1	137.4	141.2	144.4	146.6	148.2	148.8	149.3
75°	122.3	127.1	130.9	133.6	136.3	138.5	139.0	139.0
77.5°	112.0	116.9	120.6	123.9	126.1	127.7	128.2	128.8
80°	102.8	107.1	110.9	113.6	115.8	117.4	119.0	119.0
82.5°	93.1	97.9	101.7	104.4	106.6	108.7	109.3	109.8
85°	84.9	89.3	93.1	95.8	97.9	100.1	100.6	100.6
87.5°	77.4	81.7	84.9	87.6	90.3	91.4	92.5	92.5
90°	70.9	75.2	78.4	81.7	83.9	85.5	86.0	86.6
92.5°	66.5	70.9	74.1	76.8	78.4	80.1	81.1	81.1
95°	62.2	66.5	69.8	72.5	74.7	76.3	76.8	76.8
97.5°	59.0	62.8	66.0	68.2	70.3	72.0	72.5	73.0
100°	55.2	59.0	62.2	64.4	66.5	67.6	68.7	69.2
102.5°	51.9	55.7	58.4	61.1	62.8	63.8	64.9	64.9
105°	48.7	51.9	55.2	57.3	59.5	60.6	61.1	61.7
107.5°	45.4	48.7	51.9	54.1	55.7	57.3	57.9	57.9
110°	42.2	45.4	48.1	50.9	52.5	53.6	54.1	54.6



TEST NUMBER: P231605

CATALOG NUMBER: S122-DR-LO-35-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	39.0	42.2	44.9	47.1	48.7	50.3	50.9	50.9
115°	35.7	39.0	41.7	43.8	45.4	46.5	47.1	47.6
117.5°	32.5	35.7	38.4	40.6	42.2	43.3	43.8	43.8
120°	29.2	32.5	34.6	37.3	38.4	40.0	40.6	40.6
122.5°	26.5	29.2	31.4	33.5	35.2	36.2	36.8	37.3
125°	23.3	26.0	28.1	30.3	31.9	33.0	33.5	33.5
127.5°	20.0	22.7	24.9	27.0	28.1	29.2	29.8	30.3
130°	17.3	20.0	21.6	23.8	24.9	26.0	26.5	26.5
132.5°	14.1	16.8	18.4	20.6	21.6	22.7	23.3	23.3
135°	11.4	13.5	15.1	16.8	18.4	18.9	19.5	19.5
137.5°	8.7	10.8	12.4	13.5	15.1	15.7	16.2	16.2
140°	6.0	7.6	9.2	10.8	11.9	12.4	13.0	13.0
142.5°	3.2	4.9	6.5	7.6	8.7	9.2	9.7	9.7
145°	0.5	2.2	3.8	4.9	5.4	6.0	6.5	7.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)